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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/075,243

02/15/2002

Hideaki Tanaka

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EXAMINER

WONG, KIN C

ART UNIT

PAPER NUMBER

2651

DATE MAILED: 06/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/075,243

Applicant(s)

TANAKA, HIDEAKI

Examiner

K. Wong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 18-21 is/are pending in the application.
- 4a) Of the above claim(s) 12-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11 and 18-21 is/are rejected.
- 7) ☒ Claim(s) 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/15/02.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claims (11-17) are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 8/16/04.

This application contains claims (11-17) are drawn to a species nonelected with traverse in Paper No. 8/16/04. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). The term "electromotive force" in claim 21 is used by the claim to mean "self generating voltage in a motor when power is turned off or cut off", while the accepted meaning is "back-EMF or counter electromotive force." The term is indefinite because the specification does not clearly redefine the term.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims (1-9, 11 and 18-20) are rejected under 35 U.S.C. 102(e) as being anticipated by Lille (6578816).

Regarding claim 1: Lille discloses a hard disk drive (as depicted in figure 1 of Lille) including:

- a medium (elements 118a/118b in figure 1) recording information;
- a head (elements 120A-120D in figure 1) reading and writing of information with respect to the medium;
- a mechanism (element 124 in figure 1) positioning the head on the medium;
- an enclosure housing (element 2210 in figure 22 of Lille) these components therein;
- a hole (the hole or opening in enclosure is an inherent element for the air to pass thought the valve from exterior to interior which is included within the valve – see col. 11, lines 1-4 for details of Lille) formed in the enclosure passing air between the interior and the exterior of the enclosure; and

a controller controlling opening and closing of the hole in accordance with an operating condition of the medium (in col. 6, lines 11-16 and col. 8, lines 5-13 where Lille describes the controls for the air exchange in the drive). Thus, Lille discloses a valve control for exchanging air between the exterior and the interior of the drive (see col. 4, line 64 to col. 5, line 2 and col. 10, line 65 to col. 11, line 10 of Lille) that which satisfied the recited limitations.

Regarding claim 2: the limitations of wherein the controller closes the hole when the hard disk drive is not supplied with electric power are considered inherent because the control of the valve is based on the air pressure of the drive during the on operation of the drive which electric power must supplied to the drive and vice-versa – see col. 4, lines 31-52 of Lille.

Regarding claim 3: the limitations of further including a mechanism rotating (element 114 in figure 1) the medium, wherein the controller closes the hole when the medium stops rotation are considered inherent because the control of the valve is based on the air pressure of the drive that generated during the “on” operation of the drive which as a result of the rotation of the disk/spindle motor or the reduction of air pressure when the disk/spindle motor stops and vice-versa – see col. 3, lines 34-39 and col. 4, lines 31-52 of Lille.

Regarding claim 4: the limitations of wherein the controller opens the hole when the hard disk drive is supplied with electric power are considered inherent because the control of the valve is based on the air pressure of the drive during the “on” operation of

the drive which electric power must be supplied to the drive and vice-versa – see col. 4, lines 31-52 of Lille.

Regarding claims 5, 8 and 9: the limitations of further including a mechanism rotating the medium, wherein the controller opens the hole upon rotation of the medium are considered inherent because the control of the valve is based on the air pressure of the drive that generated during the “on” operation of the drive which as a result of the rotation of the disk/spindle motor or the reduction of air pressure when the disk/spindle motor “on”/rotating and vice-versa – see col. 3, lines 34-39 and col. 4, lines 31-52 of Lille.

Regarding claims 6 and 7: the limitations of wherein controller opens the hold when the hard disk drive is supplied with electric power are considered inherent because the control of the valve is based on the air pressure of the drive during the “on” operation of the drive which electric power must be supplied to the drive and vice-versa –see col. 4, lines 31-52 of Lille.

Regarding claim 11: Lille teaches that further including: a mechanism (element 114 in figure 1) rotating the medium; and an opening/closing mechanism which is controlled by the controller and which operates upon receipt of an air flow created by rotation of the medium (in col. 3, lines 34-39 and col. 4, lines 31-52 where Lille describes the control of the valve that is based on the air pressure of the drive such that generated by the air flow or pressure during the “on” operation of the drive which as a result from the rotation of the disk/spindle motor when the disk/spindle motor

"on"/rotating or the reduction of air pressure and vice-versa in the operation of the valve control).

Regarding claim 18: Lille discloses a hard disk drive (as depicted in figure 1) including:

means (elements 118a/118b in figure 1) for recording information;

means (elements 120A-120D in figure 1) for read and write of information with respect to the recording means;

means (element 124 in figure 1) positioning the means for read and write on the recording means;

means (element 2210 in figure 22) for housing these means therein;

means (the hole or opening in enclosure is an inherent element for the air to pass through the valve from exterior to interior which is included within the valve – see col. 11, lines 1-4 for details of Lille) for passing air between the inside and outside of the housing means; and

means (element 2220 in figure 22) for controlling opening and closing of the passing means in according to an operating condition of the recording means (in col. 6, lines 11-16 and col. 8, lines 5-13 where Lille describes the controls for the air exchange in the drive). Thus, Lille discloses a valve control for exchanging air between the exterior and the interior of the drive (see col. 4, line 64 to col. 5, line 2 and col. 10, line 65 to col. 11, line 10 of Lille) that which satisfied the recited limitations.

Regarding claim 19: Lille further teaches that including: means for rotating the recording means, wherein the controlling means closes the passing means when the

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recording means stops its rotation (in col. 3, lines 34-39 and col. 4, lines 31-52 where Lille describes the control of the valve that is based on the air pressure of the drive such that generated by the air flowed or pressure during the "on" operation of the drive which as a result from the rotation of the disk/spindle motor when the disk/spindle motor "on"/rotating or the reduction of air pressure and vice-versa in the operation of the valve control).

Regarding claim 20: the limitations of claim 20 is similar to claim 19 except for the positive recitation of the control point at the beginning of the medium or disk rotation. See the discussion of claim 19 for details and rejected for the same reason as claim 19.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lille (6578816).

Regarding claim 21: the reason for Lille is stated in above. However, Lille is silent on the capability for driving the valve using the back-EMF of the spindle motor when power is cut-off to the drive (using back-EMF of the spindle motor for drive other components of the disk drive is well known in the disk drive art). It would have been obvious to one of ordinary skill in the art at the time of the invention was to further

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supply power to the valve with the back-EMF power management of the drive. The rationale is as follows: one ordinary skill in the art would have been motivated to divert some of the back-EMF power of the spindle motor the valve to maintain the air pressure in the retraction procedure and up lift the head when the power is cut-off to the drive.

Allowable Subject Matter

Claim 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: regarding claim 10: the prior art of record neither disclose nor suggest a solenoid air pressure valve for regulating the airflow in a disk drive.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Andrikowich et al (6831811), Angelo et al (US2002/0012279), Cockrell (3573771), Gorove (4389687) and Tomioka (6735044) are cited for air valve control in a disk drive.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to K. Wong whose telephone number is (571) 272-7566.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, D. Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

kw

23 May 05

A handwritten signature in black ink, consisting of a stylized 'C' followed by a horizontal line and a vertical line.